

**WHAT IS CLAIMED IS:**

1        1. An apparatus for processing a calling tone of a portable device in a wire/wireless  
2        telephone, said apparatus comprising:

3              detector means for detecting electric field strength of a ring receiving generation control  
4        signal when the ring receiving generation control signal is received from a fixed device after a ring  
5        signal is received;

6              distance measurer means for measuring distance to the fixed device by using the electric  
7        field strength detected by the detector means; and

8              controller means for comparing the distance measured by the distance measurer means to  
9        a preset reference distance, and for controlling generation of a melody sound for a received ring  
10      according to a comparison result.

1        2. The apparatus of claim 1, wherein the distance measurer means includes a comparator  
2        for comparing the electric field strength detected by the detector means to preset electric field  
3        strength values.

1        3. The apparatus of claim 2, further comprising storage means for storing the preset  
2        electric field strength values and distance values corresponding to the electric field strength values.

1        4. The apparatus of claim 1, further comprising storage means for storing the preset

2 electric field strength values and distance values corresponding to the electric field strength values.

1       5. The apparatus of claim 1, further comprising display means for displaying a ring  
2 receiving message corresponding to a receiving message generation signal generated in the  
3 controller means regardless of the measured distance measured by the distance measurer.

1       6. The apparatus of claim 1, wherein the controller means disables generation of the  
2 melody sound when the distance measured by the distance measurer means is less than the preset  
3 reference distance, and generates the melody sound when the measured distance is not less than  
4 the preset reference distance.

1       7. An apparatus for processing a calling tone of a portable device in a wire/wireless  
2 telephone, said apparatus comprising:

3           key input means for supplying a key input signal to select one of an automatic mode and  
4 a manual mode;

5           detector means for detecting electric field strength of a ring receiving generation control  
6 signal when the ring receiving generation control signal is received from a fixed device after the  
7 automatic mode is set by the key input unit means and a ring is received;

8           distance measurer means for comparing the electric field strength detected by the detector  
9 means to preset electric field strength values so as to measure distance to the fixed device; and

10          controller means for comparing the measured distance to a preset reference distance, and

11 for controlling generation of a melody sound for a received ring signal according to a comparison  
12 result.

1 8. The apparatus of claim 7, wherein the manual mode of the key input means includes a  
2 first selection mode for resetting the preset reference distance and a second selection mode for  
3 generation of the melody sound by the controller whenever the ring signal is received without  
4 regard to the distance measured by the distance measurer means.

1 9. The apparatus of claim 8, wherein when a user selects the manual mode by means of the  
2 key input means, the controller means compares the distance measured by the distance measurer  
3 means to the reference distance reset by the user in the manual mode, and controls generation of  
4 the melody sound for the received ring according to the comparison result.

1 10. The apparatus of claim 6, further comprising a storage unit, and wherein, when the  
2 automatic mode is selected by means of the key input means, the preset electric field strength  
3 values and distance values corresponding to the preset electric field strength values are stored in  
4 the storage unit, and when the manual mode is selected by means of the key input means, the  
5 storage unit stores a reference distance value selected by the user under control of the controller  
6 means.

1 11. The apparatus of claim 6, further comprising display means for displaying a ring

2 receiving message corresponding to a receiving message generation signal generated in the  
3 controller means regardless of mode selection by means of the key input means and the distance  
4 measured by the distance measurer means.

1           12. The apparatus of claim 6, wherein the controller means disables the generation of the  
2 melody sound when the distance measured by the distance measurer means is less than the preset  
3 reference distance, and generates the melody sound when the measured distance is not less than  
4 the preset reference distance.

1           13. An apparatus for processing a calling tone of a wire/wireless telephone, said apparatus  
2 comprising:

3           a fixed device for receiving a ring signal through a local line, for generating a receiving  
4 melody sound corresponding to the received ring signal, and for wirelessly transmitting a signal  
5 corresponding to a ring receiving generation control signal at the same time; and

6           a portable device for receiving the signal corresponding to the ring receiving generation  
7 control signal transmitted by the fixed device, for measuring distance to the fixed device according  
8 to a detected electric field strength by detecting the electric field strength of the received signal,  
9 and for selectively generating a calling tone according to the measured distance to the fixed device;

10           wherein the portable device disables generation of the calling tone when the measured  
11 distance is less than a preset reference distance, and generates the calling tone when the measured  
12 distance is not less than the reference distance.

- 1        14. The apparatus of claim 13, wherein the portable device comprises:  
2              a receiver for receiving a wireless signal corresponding to the ring receiving generation  
3              control signal transmitted by the fixed device;  
4              a detector for detecting an electric field strength corresponding to the ring receiving  
5              generation control signal received from the receiver;  
6              a distance measurer for comparing the electric field strength detected by the detector to  
7              preset electric field strength values, and for measuring distance to the fixed device;  
8              a controller for disabling generation of a melody sound when the distance measured by the  
9              distance measurer is less than the reference distance, for generating the melody sound when the  
10             measured distance is not less than the reference distance, and for generating a receiving message  
11             display control signal regardless of the measured distance;  
12             a display for displaying a ring receiving message corresponding to the receiving message  
13             display control signal generated by the controller; and  
14             a storage for storing the preset electric field strength values and distance values  
15             corresponding to the preset electric field strength values.

- 1        15. The apparatus of claim 13, wherein the portable device comprises:  
2              a key input unit for supplying a key input signal for selecting one of an automatic mode and  
3              a manual mode according to a user selection;  
4              a detector for detecting electric field strength of a ring receiving generation control signal

5       when the ring receiving generation control signal is received from the fixed device after the  
6       automatic mode is set by the key input unit and a ring is received;

7            a distance measurer for comparing the electric field strength detected by the detector to  
8        preset electric field strength values, and for measuring the distance to the fixed device;

9            a controller for comparing the distance measured by the distance measurer with the preset  
10      reference distance, and for controlling generation of a melody sound for the received ring signal  
11      according to a comparison result;

12            a storage for storing the preset electric field strength values and distance values  
13      corresponding to the preset electric field strength values when the automatic mode is selected by  
14      the key input unit, and for storing a reference distance value selected by a user under control of the  
15      controller when the manual mode is selected by the key input unit; and

16            a display for displaying a ring receiving message corresponding to a receiving message  
17      generation signal generated in the controller regardless of mode selection by the key input unit and  
18      the distance measured by the distance measurer.

1           16. The apparatus of claim 13, further comprising a key input unit and a distance measurer,  
2        wherein when a user selects a manual mode by means of the key input unit, the controller  
3        compares a distance measured by the distance measurer to a reference distance reset by the user  
4        in the manual mode, and controls generation of a melody sound corresponding to a received ring  
5        signal according to a comparison result.

1           17. A method of processing a calling tone of a portable device in a wire/wireless telephone,  
2           comprising the steps of:  
3                 receiving a wireless signal comprising a ring receiving generation control signal transmitted  
4           from a fixed device;  
5                 detecting an electric field strength of the received ring receiving generation control signal;  
6                 measuring a distance to the fixed device by comparing the detected electric field strength  
7           with preset electric field strength values;  
8                 generating a receiving message display control signal regardless of the measured distance;  
9                 disabling generation of a melody sound when the measured distance is less than a preset  
10          reference distance;  
11                 generating the melody sound when the measured distance is not less than the preset  
12          reference distance; and  
13                 displaying a ring receiving message corresponding to the ring receiving message display  
14          control signal.

1           18. A method of processing a calling tone of a portable device in a wire/wireless telephone,  
2           comprising the steps of:  
3                 supplying a key input signal to select one of an automatic mode and a manual mode  
4           according to user selection;  
5                 detecting an electric field strength of a ring receiving generation control signal when the  
6           ring receiving generation control signal is received from a fixed device after the automatic mode

7       is selected in the supplying step and a ring is received;

8           measuring a distance to the fixed device by comparing the detected electric field strength

9       to preset electric field strength values; and

10          disabling generation of a melody sound when the measured distance is less than the preset

11       reference distance, and generating the melody sound when the measured distance is not less than

12       a preset reference distance.

1       19. The method of claim 18, wherein, in the step of generating the melody sound when the

2       manual mode is selected by a user, the measured distance is compared to a reference distance reset

3       by the user in the manual mode, and a calling tone for a received ring signal is selectively

4       processed according to a comparison result.

1       20. A method of processing a calling tone of a wire/wireless telephone having a fixed

2       device and a portable device, comprising the steps of:

3           receiving a ring signal through a local line connected to the fixed device;

4           processing a calling tone corresponding to the received ring signal;

5           wirelessly transmitting a signal, in accordance with a ring receiving generation control

6       signal, to the portable device; and

7           selectively processing the calling tone according to a measured distance to the fixed device

8       by detecting an electric field strength of the transmitted signal as received, and by measuring a

9       distance to the fixed device according to the detected electric field strength after receiving the

10 transmitted signal;

11 wherein the processing step disables the processing of the calling tone when the measured  
12 distance is less than a preset reference distance, and generates the calling tone when the measured  
13 distance is not less than the preset reference distance.

1 21. The method of claim 20, wherein the processing step comprises the sub-steps of:

2 receiving a wireless signal comprising a ring receiving generation control signal transmitted

3 by the fixed device;

4 detecting an electric field strength of the ring receiving generation control signal;

5 measuring a distance to the fixed device by comparing the detected electric field strength

6 to preset electric field strength values;

7 generating a receiving message display control signal regardless of the measured distance;

8 disabling generation of a melody sound when the measured distance is less than the preset

9 reference distance;

10 generating the melody sound when the measured distance is not less than the preset

11 reference distance; and

12 displaying a ring receiving message in accordance with a generated ring receiving message

13 generation control signal.

1 22. The method of claim 20, wherein the processing step comprises the sub-steps of:

2 selecting one of an automatic mode and a manual mode according to user selection;

3           detecting an electric field strength of the ring receiving generation control signal when the  
4         ring receiving generation control signal is received from the fixed device after a ring is received  
5         and the automatic mode is selected by a user;

6           measuring a distance to the fixed device by comparing the detected electric field strength  
7         to preset electric field strength values;

8           selectively processing a calling tone for a received ring according to a comparison result  
9         obtained by comparing the measured distance to the preset reference distance; and

10          displaying a ring receiving message corresponding to a generated receiving message  
11         generation signal regardless of mode selection and the measured distance.

1           23. The method of claim 22, wherein when the manual mode is selected in the selecting  
2         sub-step, the measured distance is compared to a reference distance reset by the user in the manual  
3         mode, and the calling tone for the received ring is selectively processed according to a comparison  
4         result.